

**STAR French-Korean
workshop "Higgs and Dark
Matter Connections"**

**Rapport sur les
contributions**

ID de Contribution: **1**

Type: **Non spécifié**

Welcome and introduction

lundi 16 décembre 2019 10:00 (30 minutes)

ID de Contribution: 2

Type: **Non spécifié**

Concluding remarks and outlook

jeudi 19 décembre 2019 11:00 (1h 30m)

ID de Contribution: 3

Type: **Non spécifié**

Spin-3/2 Dark Matter in simple s or t channel models

We consider possible spin-3/2 dark matter (DM) particles which can either interact with the Standard Model (SM) fermions through a vector mediator in the s-channel, or with SM quarks through the exchange of a charged and coloured scalar or vector mediator in a simple t-channel model. Constraints on the parameter spaces of these models are investigated, drawing from the observed relic densities, direct detection from DM-nucleon elastic scattering cross sections, and monojet searches at the Large Hadron Collider.

Orateur: CORNELL, Alan (Johannesburg University)

Classification de Session: Dark Matter

ID de Contribution: 4

Type: **Non spécifié**

Composite GUT

mercredi 18 décembre 2019 09:00 (45 minutes)

I will talk about coupling unification in a composite Higgs model, and also dark matter coming out of this.

Orateur: LEE, Seung Joon (Korea University)

Classification de Session: Astrophysics/Cosmology

ID de Contribution: 5

Type: **Non spécifié**

Techni-Pati Salam partial unification in composite Higgs models

mardi 17 décembre 2019 14:30 (30 minutes)

Orateur: VATANI, Shahram (IP2I)

Classification de Session: Composite theories

ID de Contribution: 6

Type: **Non spécifié**

Composite Models of Dark Matter

lundi 16 décembre 2019 11:00 (1h 30m)

Open discussion of possible model building directions. Chaired by G.Cacciapaglia

Classification de Session: Composite theories

ID de Contribution: 7

Type: **Non spécifié**

Higgs as inflaton

I will discuss the recent update about the Higgs inflation where the Higgs field is regarded as the inflaton field. The unitarity issue, (p)re-heating issue and the potential production of primordial black hole will be discussed.

Orateur: PARK, Seong Chan (Yonsei University)

Classification de Session: Astrophysics/Cosmology

ID de Contribution: 8

Type: **Non spécifié**

Neutrino self-interaction in the signals from blazar TXS 0506+056

lundi 16 décembre 2019 15:00 (30 minutes)

Even though conventional leptonic or lepto-hadronic models of blazar successfully explain the observed electromagnetic component of the flaring signal from the Blazar TXS 0506+056 in a large range of energy window $E_\gamma \in (10^{-1}\text{eV}, 10^2 \text{ GeV})$, the predicted neutrino flux is too small to be consistent with the IceCube observation at $E_\nu \simeq 300 \text{ TeV}$. We show that a sizable self-interaction of neutrinos with a light messenger resolves the discrepancy. Interestingly, the same physics can relieve the cosmological tension in H_0 and σ_8 .

Orateur: JHO, Yongsoo (Yonsei University)

Classification de Session: Astrophysics/Cosmology

ID de Contribution: 9

Type: **Non spécifié**

Annihilation Signatures of Neutron Dark Decay

jeudi 19 décembre 2019 09:00 (30 minutes)

We point out that two models that reconcile the neutron lifetime anomaly via dark decays of the neutron, also predict dark matter-neutron ($\bar{\chi} - n$) annihilation that may be observable in neutron-antineutron oscillation and proton decay searches at Super-Kamiokande, Hyper-Kamiokande and DUNE. We study signatures of $\bar{\chi}n \rightarrow \gamma\pi^0$ (or multi- π^0) and $\bar{\chi}n \rightarrow \phi\gamma\pi^0$ (or ϕ +multi- π^0), where ϕ is an almost massless boson in one of the two models.

Orateur: TSENG, Po-Yen (Yonsei University)

Classification de Session: Dark Matter

ID de Contribution: **10**

Type: **Non spécifié**

TBA

Orateur: IYER, Abhishek (IP2I)

Classification de Session: Dark Matter

ID de Contribution: 11

Type: **Non spécifié**

Common exotic decays of vector-like top partners: Motivation, challenges, and opportunities for collider searches

mardi 17 décembre 2019 10:00 (45 minutes)

Orateur: FLACKE, Thomas (IBS CTPU)

Classification de Session: Dark Matter

ID de Contribution: 12

Type: **Non spécifié**

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Orateur: PARK, Seong Chan

Classification de Session: Dark Matter

ID de Contribution: 13

Type: **Non spécifié**

Spin-3/2 Dark Matter in simple s or t channel models

lundi 16 décembre 2019 14:00 (45 minutes)

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Classification de Session: Astrophysics/Cosmology